

2013 Missouri Wild Turkey Brood Survey Results

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The Missouri Department of Conservation has been conducting a wild turkey brood survey annually since 1959. During the survey, Department staff and citizen volunteers record observations of hens and poults (and gobblers since 2008) during June, July, and August. Data are collected at the county-level and analyzed by Turkey Productivity Region (Figure 1). In 2013, 44,372 turkeys were observed during the 3-month survey, including 2,906 broods (Table 1).

On a statewide basis, 37% of hens were observed with a brood. The percentage of hens observed with a brood ranged from a low of 30% in the Northwest Region to a high of 43% in the Lindley Breaks Region (Table 2). At the statewide scale, the average brood size was 4.1 poults. The average brood size ranged from a low of 3.2 poults in the Mississippi Lowlands Region to a high of 4.7 poults in the Ozarks East Region (Table 2).

The 2013 statewide poult-to-hen ratio of 1.3 is 24% lower than the 2012 ratio and 7%, 7%, and 24% lower than the previous 5, 10, and 20-year statewide averages, respectively (Table 3). Poult-to-hen ratios in 2013 ranged from a low of 0.6 in the Mississippi Lowlands Region to a high of 1.7 in the Ozarks East Region (Figure 1, Table 3). Compared to the previous 5-year average, production during 2013 was up in the Northeast and Ozarks West Regions and down in the remaining seven Turkey Productivity Regions with the exception of the Ozarks East Region, where production was identical to the 5-year average (Figure 1, Table 3). With the exception of the Mississippi Lowlands Region, turkey production during 2013 was generally better in eastern Missouri, with poult-to-hen ratios ranging from 1.2-1.7 (Figure 1, Table 3). In the Northwest, West Prairie, and Ozark Border Regions of western Missouri, poult-to-hen ratios were 1.0.

Compared to results of the 2012 brood survey in which 48% of hens were observed with a brood at the statewide scale, only 37% of hens were observed with a brood in 2013. These data suggest that nest success was lower in 2013. In contrast, average brood sizes in 2012 and 2013 were 4.2 and 4.1 poults, respectively, suggesting that poult survival was relatively similar between years. Research has documented reduced wild turkey productivity during years with late springs and also during years of increased precipitation during the nesting season. Therefore, it is likely that this year's extended winter weather and above-average May rainfall throughout much of the state had an impact on the success of wild turkey hens.

Prior to 2011, Missouri's wild turkey population had experienced four consecutive years of poor production. The hatches of 2011 and 2012 represented substantial improvements,

especially in regions like the Northeast where production had been especially poor. Although turkey production during 2013 was not as high as it was during the previous two years, the hatches of 2011 and 2012 served to increase turkey numbers throughout much of the state, which should help to offset the effects of this year's poor production at the statewide scale.

Table 1. Wild turkey observations by Turkey Productivity Region (Figure 1). Data were obtained during Missouri's wild turkey brood survey, 2013.

Productivity Region	Hens w/ Broods	Hens w/o Broods	Total Hens	Poults	Broods	Gobblers
Lindley Breaks	690	929	1,619	2,652	369	1,054
Mississippi Lowlands	57	118	175	185	24	54
Northeast	688	1,111	1,799	2,984	410	1,077
Northwest	332	787	1,119	1,292	205	903
Ozark Border	486	1,091	1,577	2,019	251	1,333
Ozarks East	446	646	1,092	2,075	268	585
Ozarks West	632	1,110	1,742	2,858	393	1,524
Union Breaks	1,298	1,906	3,204	4,819	671	1,783
West Prairie	465	945	1,410	1,778	261	1,237
Statewide^a	5,156	8,701	13,857	20,914	2,906	9,601

^a Includes observations in which county of observation was not recorded on survey card.

Table 2. Wild turkey brood survey data by Turkey Productivity Region (Figure 1), obtained during Missouri's wild turkey brood survey, 2013.

Productivity Region	% Hens w/ Poults	Average Brood Size	Poult-to-hen Ratio^b	Gobbler-to-Hen Ratio
Lindley Breaks	43%	3.8	1.2	0.65
Mississippi Lowlands	33%	3.2	0.6	0.31
Northeast	38%	4.3	1.4	0.60
Northwest	30%	3.9	1.0	0.81
Ozark Border	31%	4.2	1.0	0.85
Ozarks East	41%	4.7	1.7	0.54
Ozarks West	36%	4.5	1.5	0.87
Union Breaks	41%	3.7	1.2	0.56
West Prairie	33%	3.8	1.0	0.88
Statewide^a	37%	4.1	1.3	0.69

^a Includes observations in which county of observation was not recorded on survey card.

^b Does not include observations of >2 hens per brood.

Table 3. Index (poult-to-hen ratio) of Missouri wild turkey production listed by Turkey Productivity Region (Figure 1). Data were obtained from the 2013 brood survey and are compared to previous years. For each interval value, the % change indicates how the 2013 index compares to the previous year or the average for periodic intervals.

Productivity Region	2013 Index	1-year (2012) Change	5-year (2008-2012) Change	10-year (2003-2012) Change	20-year (1993-2012) Change
Lindley Breaks	1.2	-25%	-20%	-20%	-37%
Mississippi Lowlands	0.6	-73%	-67%	-71%	-71%
Northeast	1.4	-7%	+8%	+8%	-18%
Northwest	1.0	-41%	-23%	-29%	-47%
Ozark Border	1.0	-41%	-17%	-17%	-41%
Ozarks East	1.7	-32%	0%	0%	-15%
Ozarks West	1.5	-6%	+15%	+7%	-12%
Union Breaks	1.2	-20%	-14%	-14%	-29%
West Prairie	1.0	-33%	-17%	-17%	-41%
Statewide	1.3	-24%	-7%	-7%	-24%